REMARKS/ARGUMENTS

Claims 3-8, 10-17, 20-25, 27-34, 37-42, and 44-51 are pending in the present application. By this response, claims 1, 2, 18, 19, 35, and 36 are canceled, and claims 6, 23, and 40 are amended. Reconsideration of the claims in view of the above amendments and the following remarks is respectfully requested.

I. 35 U.S.C. § 102, Alleged Anticipation, Claims 1 and 3-7

The Office has rejected claims 1 and 3-7 under 35 U.S.C. § 102(e) as being anticipated by Intel Corp, Preboot Execution Environment (PXE) Specification, September 20, 1999 (hereinafter "Intel"). This rejection is respectfully traversed.

Sections 2-4 on pages 2 and 3 of the Office Action dated May 2, 2005, indicates that claims 1 and 3-7 are rejected under Intel, however, the detailed rejection is related to claims 1, 18, and 35. Thus, Applicants assume that the 35 U.S.C. § 102(e) rejection is related only to claims 1, 18 and 35 and not claims 3-7, as claims 3-7 are covered under other rejections in the Office Action dated May 2, 2005. Arguments with regard to claims 3-7 are in the sections that follow.

By this response, claims 1, 18, and 35 are canceled.

II. 35 U.S.C. § 103, Alleged Obviousness, Claims 2 and 9-14

The Office Examiner has rejected claims 2 and 9-14 under 35 U.S.C. § 103(a) as being unpatentable over Intel in view of Yoshida et al., File Server Load Distribution System and Method, U.S. Patent No. 6,401,121 B1, June 4, 2002 (hereinafter "Yoshida"). This rejection is respectfully traversed.

Sections 5-9 on pages 3-5 of the Office Action dated May 2, 2005, indicates that claims 2 and 9-14 are rejected under Intel in view of Yoshida, however, the detailed rejection is related to claims 2, 3, 5, 19, 20, 22, 36, 37, and 39. Thus, Applicants assume that the 35 U.S.C. § 103(a) rejection is related only to claims 2, 3, 5, 19, 20, 22, 36, 37, and 39 and not claims 9-14, as claims 9-14 are covered under other rejections in the Office Action dated May 2, 2005. Arguments with regard to claims 9-14 are in the sections that follow. The following arguments are in relation to claims 2, 3, 5, 19, 20, 22, 36, 37, and 39. By this response, claims 2, 19, and 36 are canceled.

As to independent claims 3, 20, and 37, the Office states:

> In reference to claim 3, 20 and 37; Intel teaches a method, an apparatus and a computer program product for facilitating a remote boot process in a client device,

> wherein the client device and the server device reside on a network, the method comprising the steps of:
>
> receiving at the server device a boot request from the client device, wherein the server device is one of a plurality of boot servers on the network, and wherein the server device is able to respond to a boot request from any client on the network (see pages 12-14, step 5 and Figure 2- 1, step 5);
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> in response to a determination that the server device is able to service an additional boot request, sending a boot response to the client device, wherein the boot response to the client device to download boot files from the server device (see pages 12-14, steps 6&7 and Figure 2-1, steps 6&7).
>
> Intel fails to explicitly teach determining whether or not the server device is able to service an additional boot request. However, Yoshida teaches prior to sending a server response to a client device, determining that the server device has sufficient resources to service a request for an additional client device (Abstract and Summary).
>
> It would have been obvious for one of ordinary skill in the art to modify Intel by defining an available boot server as a server with sufficient resources as per the teachings of Yoshida so server loads can be distributed and prevent server overload (i.e. exceeded load capacity).

Office Action dated May 2, 2005, page 4.

Claim 3, which is representative of the other rejected independent claims 20 and 37 with regard to similarly recited subject matter, reads as follows:

> 3. A method within a server device for facilitating a remote boot process in a client device, wherein the client device and the server device reside on a network, the method comprising the steps of:
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> receiving at the server device a boot request from the client device, wherein the server device is one of a plurality of boot servers on the network, and wherein the server device is able to respond to a boot request from any client device on the network;
>
> determining whether or not the server device is able to service an additional boot request; and
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> in response to a determination that the server device is able to service an additional boot request, sending a boot response to the client device, wherein the boot response directs the client device to download boot files from the server device.

The Office bears the burden of establishing a *prima facie* case of obviousness based on the prior art when rejecting claims under 35 U.S.C. § 103. *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992). The Office acknowledges that Intel does not explicitly teach determining whether or not the server device is able to service an additional boot request. However, the Office alleges that Yoshida teaches this feature. Yoshida is directed to a load distribution system that includes a plurality of servers, each server having a memory device in which are stored a plurality of data files for transmission to a plurality of client stations. Yoshida has a control server which is connected to the plurality of servers for controlling the distribution of transmission requests from client stations as loads on the servers by acquiring transmission counts for data files that are transmitted by the plurality of servers. Yoshida determines

which server should respond to a transmission request as a data transmission server based on which server has a transmitted data count which is the smallest.

Yoshida does not teach determining whether or not the server device is able to service an additional boot request. The Office alleges that this feature is taught in the following sections:

> A load distribution system includes a plurality of servers, each having a memory device in which are stored a plurality of data files for transmission to a plurality of client stations, and a control server which is connected to the plurality of servers for controlling the distribution of transmission requests from client stations as loads on the servers by acquiring transmission counts for data files that are transmitted by the plurality of servers, and determining which server should respond to a transmission request as a data transmission server based on which server has a transmitted data count which is the smallest.

(Yoshida, Abstract)

> This invention solves the above-described problems. It is one object of the invention to provide a load distribution system for a plurality of servers whereby the loads placed on CPUs and networks, and the number of disk accesses or the loads placed on the disk-accessing capacities of the servers are distributed. It is another object of the invention to provide a method for load distribution over a plurality of servers to eliminate the problems encountered with the conventional systems.
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> A load distribution system according to one aspect of the invention comprises a plurality of servers, each having a memory device which stores data sets, for transmitting the data sets to a plurality of client stations; and a control server connected to the plurality of servers, the control server including a calculation device for acquiring a count of data sets that are transmitted by the plurality of servers, and a determination device for receiving transmission requests from the plurality of client stations, and for selecting, as a data transmission server, that server for which a transmitted data set count, which is acquired by the calculation device, is smallest among all the servers.
>
> A load distribution system according to another aspect of the invention comprises a control server which includes a calculation device for calculating bandwidths that indicate a bit count per unit of time for data that are transmitted by each of the plurality of servers, and a determination device for receiving from the client stations transmission requests for the data, and for selecting, as a data transmission server, that server which has, for the bandwidths that are acquired by the calculation device, a sum that is smallest among all the servers.
>
> According to yet another aspect of the invention, a load distribution method for a plurality of data servers includes a calculation step of acquiring counts of data that are transmitted by the servers to client stations, and a decision step of receiving transmission requests for the data from the client stations, and selecting as a data transmission server that server for which a count of data that are transmitted is smallest.
>
> A load distribution method according to still another aspect of the invention comprises a calculation step of acquiring bandwidths that each indicate a bit count per unit of time for data that are transmitted to client stations by a plurality of servers, and a decision step of receiving transmission requests for the data from the client stations, and selecting, as a data transmission server, a server that has a bandwidth sum that is smallest.
>
> Other objects and advantages of this invention will become apparent from the detailed description given hereinafter. It should be understood, however, that the detailed description and specific embodiment are given by way of illustration only since various

changes and modifications within the spirit and scope of the invention will become apparent to the those skilled in the art from this detailed description.

(Yoshida, Summary of the Invention)

In these sections, Yoshida describes a load distribution system that uses a control server and a load distribution processing program that determines which of video servers 1 and 2 can fulfill a video service request from client stations. A video server management table stores data concerning various parameters of video servers 1 and 2. A client management table stores data concerning various parameters of client stations. The load distribution processing program performs load distribution processing to select the optimal video server 1 or 2 consonant with the input data. In consonance with the input data the control server and the load distribution processing program determine the optimal video server 1 or 2 for processing the video request using the current operational states of the video servers 1 and 2 and data concerning the requested video file that are obtained by the load distribution program. Then the control server and a load distribution processing program indicate the optimal video server in output data. The load distribution processing program thus functions to calculate and determine the optimal video server based on the content of the input data, the video server management table, and the client management table. (See Yoshida, column 3, lines 40-67)

The control server and a load distribution processing program use maximum transmission counts of the video servers; current transmissions by the video servers; maximum bandwidths of the video servers; bandwidths being employed by the video servers for the current transmission; total disk capacities of the video servers; and maximum simultaneous transmission counts for the files of the video servers to determines which video server to select. (See Yoshida, column 4, lines 7-22)

Thus, the control server Yoshida merely determines which of a set of video servers is able to fulfill a video service request based on maximum transmission counts; current transmissions; maximum bandwidth; bandwidths being employed for current transmissions; total disk capacities; and maximum simultaneous transmission counts to determines which video server to select. In contradistinction, the present application determines whether or not the server device is able to service an additional boot request by the service device and not another server. Yoshida does not teach or suggest a video server determining whether or not the video server is able to service an additional boot request. That is, Yoshida's control server is deciding which video server will fulfill the request. Yoshida's video server merely fulfills any request sent to it by the control server.

The Office bears the burden of establishing a *prima facie* case of obviousness based on the prior art when rejecting claims under 35 U.S.C. § 103. *In re Fritch*, 972 F.2d 1260, 23 U.S.P.Q.2d 1780 (Fed. Cir. 1992). Since the references fail to teach or suggest determining whether or not the server device is able to service an additional boot request, the Office has failed to establish a *prima facie* case of

obviousness, because the Office does not show where each and every claim limitation is taught or fairly suggested by the applied prior art.

The applied references do not teach or suggest each and every claim limitation; therefore, Intel and Yoshida, taken alone or in combination, do not render claims 3, 20, and 37 obvious. Since claims 5, 22, and 39 depend from claims 3, 20, and 37, the same distinctions between Intel and Yoshida and the invention recited in claims 3, 20, and 37 apply for these claims. Additionally, claims 5, 22, and 39 recite other additional combinations of features not taught or suggested by the references.

Furthermore, no teaching or suggestion is present in the references to modify the references to include such features. More specifically, there is no teaching or suggestion in Intel or Yoshida that a problem exists for which determining whether or not the server device is able to service an additional boot request, is a solution. To the contrary, Intel does not explicitly teach determining whether or not the server device is able to service an additional boot request as acknowledged by the Examiner and Yoshida teaches load distribution.

Moreover, neither reference teaches or suggests the desirability of incorporating the subject matter of the other reference. That is, there is no motivation offered in either reference for the alleged combination. The Office alleges that the motivation would be "to define an available boot server as a server with sufficient resources as per the teachings of Yoshida so server loads can be distributed and prevent server overload." The present invention provides for determining whether or not the server device is able to service an additional boot request. As discussed above, Intel does not teach this feature and Yoshida teaches load balancing. Neither reference teaches or suggests determining whether or not the server device is able to service an additional boot request. Thus, the only teaching or suggestion to even attempt the alleged combination is based on a prior knowledge of Applicants' claimed invention thereby constituting impermissible hindsight reconstruction using Applicants' own disclosure as a guide.

One of ordinary skill in the art, being presented only with Intel and Yoshida, and without having a prior knowledge of Applicants' claimed invention, would not have found it obvious to combine and modify Intel and Yoshida to arrive at Applicants' claimed invention, as recited in claim 3. To the contrary, even if one were somehow motivated to combine Intel and Yoshida, and it were somehow possible to combine the systems, the result would not be the invention, as recited in claim 3. The resulting system would still fail to determine whether or not the server device is able to service an additional boot request.

In view of the above, Applicants respectfully submit that the Intel and Yoshida, taken alone or in combination, fail to teach or suggest the features of claims 3, 20, and 37. At least by virtue of their dependency on claims 3, 20, and 37, the features of dependent claims 5, 22, and 39 are not taught or

suggested by Intel and Yoshida, whether taken individually or in combination. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 3, 5, 20, 22, 37, and 39 under 35 U.S.C. § 103.

III. 35 U.S.C. § 103, Alleged Obviousness, Claims 4, 21, and 38

The Office has rejected claims 4, 21, and 38 under 35 U.S.C. § 103(a) as being unpatentable over Intel in view of Yoshida, further in view of Microsoft Corp. Description of PXE Interaction Among PXE Client, DHCP, and RIS Server, December 29, 1999 (hereinafter Microsoft). This rejection is respectfully traversed.

Claims 4, 21, and 38 are dependent on independent claims 3, 20, and 37 and, thus, these claims distinguish over Intel and Yoshida for at least the reasons noted above with regards to claims 3, 20, and 37. Moreover, Microsoft does not provide for the deficiencies of Intel and Yoshida and, thus, any alleged combination of Intel, Yoshida, and Microsoft would not be sufficient to reject independent claims 3, 20, and 37 or claims 4, 21, and 38 by virtue of their dependency.

In view of the above, Intel, Yoshida, and Microsoft, taken either alone or in combination, fail to teach or suggest the specific features recited in independent claims 3, 20, and 37, from which claims 4, 21, and 38 depend. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 4, 21, and 38 under 35 U.S.C. § 103.

IV. 35 U.S.C. § 103, Alleged Obviousness, Claims 6, 23, and 40

The Office has rejected claims 6, 23, and 40 under 35 U.S.C. § 103(a) as being unpatentable over Intel in view of Microsoft. This rejection is respectfully traversed.

Sections 12-15 on pages 6 and 7 of the Office Action dated May 2, 2005, indicates that claims 6, 23, and 40 are rejected under Intel in view of Microsoft, however, the detailed rejection is related to claims 6-8, 23-25, and 40-42. Thus, Applicants assume that the 35 U.S.C. § 103(a) rejection is related to claims 6-8, 23-25, and 40-42 and the arguments that follow are in relation to claims 6-8, 23-25, and 40-42. By this response, claims 6, 23, and 40 have been amended to incorporate the subject matter of claims 9, 26, and 43, which were rejected under Intel in view of Microsoft and further in view of Yoshida. Thus, the following remarks are directed to the combination of Intel, Yoshida, and Microsoft.

Independent claims 6, 23, and 40 recite similar features in their respective claim terminology. Amended claim 6 which is representative of the other rejected independent amended claims 23 and 40 with regard so similarly recited subject matter, recites "prior to sending the PXE-extended DHCP Ack message to the client device, determining that the server device has sufficient resources to service a

remote boot process for an additional client device." As discussed above, Yoshida merely determines which of a set of video servers is able to fulfill a video service request based on maximum transmission counts; current transmissions; maximum bandwidth; bandwidths being employed for current transmissions; total disk capacities; and maximum simultaneous transmission counts to determines which video server to select. In contradistinction, the present application determines whether or not the server device is able to service an additional boot request by the service device and not another server. Yoshida does not teach or suggest a video server determining whether or not the video server is able to service an additional boot request. That is, Yoshida's control server is deciding which video server will fulfill the request. Yoshida's video server merely fulfills any request sent to it by the control server.

Thus, in view of the above, Applicants respectfully submit that the Intel, Yoshida, and Microsoft, taken alone or in combination, fail to teach or suggest the features of claims 6, 23, and 40. At least by virtue of their dependency on claims 6, 23, and 40, the features of dependent claims 7, 8, 24, 25, 41, and 42 are not taught or suggested by Intel, Yoshida, and Microsoft, whether taken individually or in combination. Accordingly, Applicants respectfully request withdrawal of the rejection of claims -8, 23-25, and 40-42 under 35 U.S.C. § 103.

V. <u>35 U.S.C. § 103, Alleged Obviousness, Claim 9</u>

The Office has rejected claim 9 under 35 U.S.C. § 103(a) as being unpatentable over Intel in view of Microsoft in further view of Yoshida. This rejection is respectfully traversed.

Sections 16-19 on pages 8 and 9 of the Office Action dated May 2, 2005, indicates that claim 9 is rejected under Intel in view of Microsoft and further in view of Yoshida, however, the detailed rejection is related to claims 9-17, 26-34, and 43-51. Thus, Applicants assume that the 35 U.S.C. § 103(a) rejection is related to claims 9-17, 26-34, and 43-51 and the arguments that follow are in relation to claims 9-17, 26-34, and 43-51. By this response, claims 9, 26, and 43 are canceled.

Claims 10-17, 27-34, and 44-51 are dependent on independent claims 6, 23, and 40 and, thus, these claims distinguish over Intel, Microsoft, and Yoshida for at least the reasons noted above with regards to claims 6, 23, and 40. Moreover, Yoshida does not provide for the deficiencies of Intel and Microsoft and, thus, any alleged combination of Intel, Microsoft, and Yoshida would not be sufficient to reject independent claims 6, 23, and 40 or claims 10-17, 27-34, and 44-51 by virtue of their dependency.

In view of the above, Intel, Microsoft, and Yoshida, taken either alone or in combination, fail to teach or suggest the specific features recited in independent claims 6, 23, and 40, from which claims 10-17, 27-34, and 44-51 depend. Accordingly, Applicants respectfully request withdrawal of the rejection of claims 10-17, 27-34, and 44-51 under 35 U.S.C. § 103.

VI. Conclusion

It is respectfully urged that the subject application is patentable over the prior art of reference and is now in condition for allowance. The Examiner is invited to call the undersigned at the below-listed telephone number if in the opinion of the Examiner such a telephone conference would expedite or aid the prosecution and examination of this application.

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Respectfully submitted,

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